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The Perceived Usability of Virtual Visits Among Black Adults' Receiving Oncology Care: A Qualitative Analysis

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Abstract

Background:: With the COVID-19 pandemic came rapid uptake in virtual oncology care. During this, sociodemographic inequities in access to virtual visits (VVs) have become apparent. To better understand these issues, we conducted a qualitative study to describe the perceived usability and acceptability of VVs among Black adults diagnosed with cancer.

Methods:: Adults who self-identified as Black and had a diagnosis of prostate, multiple myeloma, or head and neck cancer were recruited from 2 academic medical centers, and their community affiliates to participate in a semi-structured interview, regardless of prior VV experience. A patient and family advisory board was formed to inform all components of the study. Interviews were conducted between September 2, 2021 and February 23, 2022. Transcripts were organized topically, and themes and subthemes were determined through iterative and interpretive immersion/crystallization cycles.

Results: Of the 49 adults interviewed, 29 (59%) had participated in at least one VV. Three overarching themes were derived: (1) VVs felt comfortable and convenient in the right contexts; (2) the technology required for VVs with video presented new challenges, which were often resolved by an audio-only telephone call; and (3) participants reported preferring in-person visits, citing concerns regarding gaps in nonverbal communication, trusting providers, and distractions during VV.

Conclusion: While VVs were reported to be acceptable in specific circumstances, Black adults reported preferring in-person care, in part due to a perceived lack of interpersonal connectedness. Nonetheless, retaining reimbursement for audio-only options for VVs is essential to ensure equitable access for those with less technology savvy and/or limited device/internet capabilities.

Key words: cancer care; telemedicine; disparities; tele-visits; technology acceptance model; telehealth; equity.

Implications for Practice
Sociodemographic disparities in the uptake of virtual visits exist. Understanding these disparities is essential as oncology care adapts to the changing role of technology. Black patients have decreased uptake of virtual visits. This study explores perceptions of Black adults with cancer. Black adults indicated that while virtual visits could be acceptable in the right situations, the preference was for in-person visits. As well, Black adults emphasized the need for telephone only options to communicate to support adults without access to video visit technology or as a backup if the video visits failed.

Introduction

During the COVID-19 pandemic, virtual healthcare visits (real-time video or telephone calls with a medical provider)

became necessary, especially among immunocompromised oncology patients. With increasing pandemic-related safety restrictions and limitations on in-person cancer services, there

was a rapid uptake of virtual technology. As safety measures relaxed, the use of virtual visits (VVs) waned. Still, there are indications of longevity.[1,2] Virtual care offers many benefits to patients including reduced travel time, the ability to receive care in the comfort of one's home, and overall convenience; documented disadvantages include limited physical examination and inability to complete laboratory tests.[3] While early applications of telemedicine technology focused on uptake amongst rural and patients with less resources, few studies have evaluated patient's perception of oncology VVs after the height of the pandemic and none have focused on the perceptions of self-identified Black patients.[4]

Studies have found that Black patients are less likely to participate in video-based VVs compared with telephone VVs, in part due to technological challenges, patient preference, and technology literacy.[5,6] Even with navigation support, Black adults are less likely to participate in video VV.[7] While previous studies have explored patient perceptions of virtual care, many did not report race or involved only a small number of Black adults.[1,4,8-15] Furthermore, these studies focus on patients that have had experience with VVs. Knowing the decreased uptake among Black adults, perceptions of adults not having experienced VVs could provide insight into barriers to uptake of this new technology. We assessed perceptions of virtual care usability and acceptability 18-24 months after the onset of the COVID-19 pandemic among Black adults with cancer.

Methods

Setting, Participant Identification, and Recruitment

To ensure comprehensive reporting of methodology, the Standards for Reporting Qualitative Research (SRQR) were used.[16] We used the electronic health records (EHR) at 2 academic medical centers and their community affiliates (in North Carolina and Michigan) to identify Black adults ≥ 21 years old with a prostate, multiple myeloma, or head and neck cancer diagnosis (hereafter *adults*). These academic centers were chosen in part because they both provide cancer care to large numbers of Black adults. The disease sites were chosen because of their disproportionate prevalence among and known care quality inequities faced by Black adults.[17-24] Adults with evidence of cancer treatment (for head and neck cancer), evidence of bone marrow biopsy and diagnosis (for multiple myeloma), or evidence of diagnosis (prostate cancer) between June 1, 2019 and March 31, 2021 and an outpatient visit to an oncology, radiation oncology, urology, or otolaryngology clinic within the 12-month period ending March 31, 2021 were study eligible. Adults were recruited using random sampling to participate in one, ~40-minute in-depth interview regarding their experiences with and perceptions of VVs. As this study aimed to identify an in-depth understanding of peoples' perceptions, and due to limitations on in-person gatherings during the time of data collection, interviews were chosen over focus groups. To achieve meaning saturation, per an a priori specified study protocol, we aimed to recruit 48 adults, stratifying recruitment by disease type and health system to achieve our goal of a minimum of 24 participants at each organization and a minimum of 16 for each disease site.[25]

Three trained interviewers (3 females of diverse racial/ethnic backgrounds: Black, Middle Eastern Northern African, White) with backgrounds in public health, social work, and human biology placed a voice-only call to eligible adults using random number-ordered lists. Prior to the call, a letter of study introduction was sent via US Postal Service. Each adult was called up to 5 times; voice messages were left when possible. After confirming study eligibility by self-reporting race and cancer diagnosis, all participants provided verbal consent for study participation. Participants received a $35 incentive. All interviews were conducted from September 2, 2021 to May 13, 2022.

The University of North Carolina at Chapel Hill Institutional Review Board (IRB) reviewed and approved the study protocol. A patient and family advisory board (PFAB) comprised of Black adults impacted by cancer was convened to ensure community engagement throughout the research process using regularly scheduled meetings to discuss proposal development, strategies for recruitment, and interview guide development. Once data were collected, PFAB members provided input regarding theme development and results interpretation. Two members of the PFAB also participated in monthly investigators calls.

Data Collection

Guided by the Technology Acceptance Model (TAM),[26] the interview guide elicited participant's use and perceptions of VVs (Supplementary Table B). As such, we were particularly interested in participant's perceptions of the usefulness of virtual visits as well as their ease of use. To understand study participant's lived healthcare experiences, the interview guide also asked respondents to describe particularly positive and negative experiences. After obtaining information specific to VV use experience, subsequent questions were tailored to those experiences. All members of the core investigation team with backgrounds in cancer care delivery, clinical medicine, epidemiology, health communication and decision-making, health services research, and public health were involved in the development of the interview guide. Interviews were audio-recorded and transcribed verbatim using automated audio-transcription within the web-enabled conference software with a research assistant correcting transcripts for completeness/accuracy.

Data Analyses

During analyses we began by identifying topical issues raised by study participants, regardless of the interview question that generated the response. This was done via multiple small group meetings within which 4 research team members with backgrounds in epidemiology, health communication, and health services research independently reviewed batches of 2-3 transcripts to identify and discuss key topical issues raised by the study participants. As such, as this group worked through transcripts, they identified topical issues raised by participants in response to specific questions contained within the semi-structured interview guide (eg, family engagement during virtual visits) as well as topical issues that participants raised more broadly regardless of the specific question asked (eg, comparisons of patient-provider communication during virtual and in-person visits). We continued this process until there was a round without the identification of a new topic. This resulted in the identification of 16 topics, three pertaining to healthcare experiences in general and 13 specific to VVs (Supplementary Table A1). One research assistant (a pre-med undergraduate student) then used these topics along with an "other" option to code the interview data within Atlas.ti (Version 22.2.3). Because she did this over a 5-month period,

she recoded 5 of the initially completed transcripts as she finished organizing the last few transcripts within Atlas.ti. In so doing, we were able to evaluate possible temporal changes in how she coded the data by estimating intra-rater reliability via unweighted Cohen's kappa (Cohen's κ 0.79).

Once all data were organized within Atlas.ti, as a second step (step 2), 2 team members (a health services researcher and a head and neck surgeon) used the 6 topic reports that collectively contained the majority (59%) of the quotations to begin thematic identification using an immersion-crystallization process.[27] For data immersion, each independently read the reports to become familiar with the data and to begin to gain insights into emergent themes. After this initial immersion, the two team members came together to share and discuss their initial thoughts, aligning relevant quotes to emerging overarching themes to assist with crystallization. This continued through 3 cycles, after which preliminary findings (emergent overarching themes and quotes) were shared during a standing research team meeting (that included all members of the research team, including two PFAB members) (step 3) as well as a Patient and Family Advisory Board meeting to assist with meaning interpretation and the identification of subthemes (step 4). The same two researchers then repeated the same immersion, crystallization process with data from the remaining topical reports to confirm overarching themes and assist with subtheme identification (step 5). The final themes and subthemes with illustrative quotes were then shared again with the larger research team (step 6) and the PFAB (step 7) for further corroboration. Finally, to ensure that the themes and subthemes represented perceptions of patients receiving care within both organizations, with all 3 types of cancer, and with and without virtual visit experience, we confirmed that quotes mapped to the final themes and subthemes represented participants from each subgroup. Illustrative quotes are presented using a study identification number that embeds information regarding health care organization, cancer type, and virtual visit experience as described in the key in Table 1. Unless otherwise noted, we found themes and interpretations to apply wholistically to the sample.

Results

Study Participants
A total of 49 adults were interviewed (Table 2). Twenty-nine (59%) reported having experienced a VV, with 10 reporting both video and telephone VVs, 11 reporting only telephone VVs, and 8 reporting only video VVs.

To contextualize their perceptions of VV, participants' were asked to describe particularly positive and negative experiences with health care in the past. When describing positive experiences, participants tended to focus on *relational communication* describing their providers as attentive and accessible, compassionate, caring, and nice, while also being clear about what to expect (Table 3). Negative experiences were elicited and focused on *physical discomfort associated with cancer care* (eg, side effects and symptoms) and *inattentive*, *disrespectful*, and *inaccessible communication* (Table 3).

Perspectives on Virtual Visits
Our analyses identified 3 overarching themes pertaining to VVs. Each of these themes were reported by participants having experienced video visits (quote demarcated using a _V), telephone visits (_T), both visit types (_B), and no history of VVs (_N). First, VVs were perceived as acceptable: VVs were seen as a comfortable and convenient alternative to in-person office visits, when clinically appropriate. Second, indicative of obstacles to their ease of use, telephone-only visits were critical to overcoming the technology-related challenges introduced by VVs. Finally, despite acknowledgements of acceptability, Black adults preferred in-person visits. Additional thematic details and illustrative participant quotations are provided below and in Table 4.

Virtual Visits Are a Comfortable and Convenient Option When Appropriate
In general, participants reported a *willingness to use VVs* to interact with their oncology team:

> So, I was a little hesitant about it, but it was fine. … I just had to adjust, the getting comfortable with it in my head and it was fine. (A_MM_06_B)

Particularly among patients having completed VVs, VVs were favored due to their *comfort and convenience* and were especially appreciated when a participant was not feeling well. Participants acknowledged the convenience of staying home and avoiding travel-related logistics, describing decreased time- and travel-related costs associated with VVs compared

Table 1. Participant label key

Label	Description	Key
AA	Alpha health system code—denotes the health system of which each participant is a patient	A = Midwest B = Southeast
BB	Alpha disease code—denotes the site of cancer for which the patient was treated or monitored	H = head and neck MM = multiple myeloma P = prostate
##	Numeric code unique to the participant	
C	Alpha virtual experience code—denotes the virtual visit experience patients reported	V = video visit only T = telephone visit only B = both virtual and telephone visits N = none

Description of components of the participant labels (AA_BB_##_C).

Table 2. Characteristics of the sample (*N* = 49)

Characteristic		*n* (%)
Age (years)	20-29	1 (2%)
	30-39	2 (4%)
	40-49	3 (6%)
	50-59	10 (20%)
	60-69	22 (45%)
	70+	11 (22%)
Gender	Female	22 (45%)
	Male	27 (55%)
Cancer type	Head and Neck	16 (33%)
	Prostate	16 (33%)
	Multiple Myeloma	17 (35%)
Prior virtual visit experience	No	20 (41%)
	Yes	29 (59%)
Visit type among those with virtual visit	Both	10 (34%)
	Telephone only	11 (38%)
	Video only	8 (28%)

to in-person visits and how VVs resulted in needing less time away from work.

> Well… It's cheaper […] if you ain't got to spend no gas money driving down there. (B_MM_04_T)

Especially during the COVID-19 pandemic, participants perceived VVs as enabling them to communicate with their providers while keeping themselves safe.

> …really wasn't comfortable going to […] the office. So that the virtual appointment made it a lot better.– (B_HN_09_T)

Participants qualified their acceptance of VVs, stating acceptance when visit purpose *was appropriate for the virtual format*. Participants, regardless of VV experience, felt VVs appropriate for follow-ups, medication check-ins, and receipt of laboratory testing results. They also acknowledged their appropriateness when the visit involved only information transfer between them and their providers such as discussing results or medication changes.

> I am all for virtual visits, as long as they're within the scope of what's needed (B_HN_04_N)
> …is very convenient for things of that, […] maybe discussing my medication change or something like that– (B_HN_13_T)

Despite the acceptance of VVs, participants reported feeling reassured knowing that an in-person option was available if needed and that they could alternate between in-person and VVs as needed, whether they had VV experience or not.

> And it was just a check in, if something was wrong, I could have changed it (B_HN_11_N)
> Yes, I'd continue to have them, especially the way we doing them now, where it's two months of virtual visits

and […] then the next month, you know, in-person visit. (B_MM_10_B)

Virtual Visits Presented Technology-Related Challenges That Are Easily Resolved by Diverting to a Telephone Call

Both participants with and without experience with VV conveyed anxiety and stress around VV technology. They *experienced anxiety and hesitation about their device availability, capabilities, skills, and confidence in VV technology*. They also noted issues with the technology, such as dropped connections, and/or internet connectivity.

> Well, it gave me some anxiety at the beginning, when I was doing it incorrectly and trying to get online and not being successful.– (B_HN_12_B)
> I don't have a lot of confidence in my abilities when it comes to technical things.– (A_HN_09_N)

Despite these concerns, participants with experience in either telephone and/or virtual visits discussed how, *with support from family and clinic staff, they could use VVs successfully*. Importantly, the *ability for the provider to call them via telephone (ie, a voice only visit) as a backup was reassuring* to participants and a necessary solution when VVs did not work.

> …they did like a uh, a pre-test like the day before to see about a good connection.– (A_P_04_B)
> …they tried to video about three times. It never worked, but they did come through with the telephone visit.– (A_MM_03_T)

Black Adults Preferred In-person Visits

While participants generally accepted VVs, there was still a preference for in-person visits regardless of their prior experience with VV.

> I want to be in the present (B_MM_03_V)
> … I think it's the lazy way out. Certain things should be virtual; your doctor shouldn't be one of [th]em. (A_P_09_N)

Participants felt that even though the informational content of VVs might be equal to in-person visits, *nonverbal communication had important shortcomings*. Participants felt less connected with their providers, missed physical touch, and felt important body language cues were (or would be) missing, all of which were felt to be important communication elements not present in VVs.

> …but not being face-to-face with a person for me personally is just that I feel a little disconnected from a doctor.– (A_P_06_V)
> They also look at you […] emotionally how you are doing […] with your cancer treatment and that's kind of hard to gauge […] in a virtual visit– (B_MM_10_B)

Although expressed only by participants who had not experienced video visits (ie, telephone visits only or no virtual visits), *trust-related issues were raised,* particularly not being sure if they were talking to a doctor or if the doctor was being honest with them.

Table 3. Participants' general healthcare experiences

Themes	Illustrative quotes
Positive experiences	
Focused on relational communication	"Uh, receiving cancer I had uh, really good nurses. I had a cancer care team that personally talked to me as in a nutritionist, I had nurse practitioners call me, I had a psychologist call me, uhm, as well as I had my oncology team" A_HN_14_V
	"I can reach out. You know, to them anytime you know, 'cause they have a number to reach, you know if I have any complications or having pain. There's a on call um nurse that's on at night just after closing hours. So yeah, it's not like I can't get in touch with anyone, you know, if I have any questions or concerns about my health." A_MM_07_B
	"I think he was able to um kind of talk me through the process, let me know what I should expect, uh you know he was very thorough, so he was able to answer any questions that me and my wife had" A_P_10_B
	"Okay, the positive experience that I had that after I went home. They stayed in contact with me and make sure that that neither had no um . . . No bad experience and nothing that went wrong they um will call me about twice a week, you know to see how i'm doing and. If they're very concerned about it and there was on top of it." B_P_01_T
	"Um . . . I was at an appointment and I recently had lost my husband from a stroke, and I was . . . I was in the lobby and I was very upset and a total stranger, she ended up being an employee noticed that I was upset, she stopped, she talked to me . . . And then she referred me down to the Family Resource Center and they were very compassionate towards me. They took me into a quiet room, put me in a recliner, played soft music, and it really helped me just kind of get myself together" B_MM_01_B
	". . . the positive was just being able to feel like you're heard and having all your questions answered, even questions if you didn't even- the provider knew ahead of time what was on your mind because they've done this over and over again so being able to be with someone that knows to direct your anticipation and what you're thinking and what may be going to happen in your mind um is very helpful" B_HN_05_V
Negative experiences	
Physical discomfort associated with cancer care	"the only negative aspect I had- had of it was just um some burns but they healed up very quickly" B_HN_09_N
	"But, uh, I-I swelled up with the steroid and all that, you know, and uh, I had to take laxatives and all that type of stuff to get the fluid out of my body. So that's the negative part I had to go through." B_MM_07_T
	"Mmm. Uh, there, I mean. I guess the negative experience is just this whole transplant process. You know, and the chemo I would say that would be the negative experience." A_MM_05_V
	"I was telling my old lady that, you know, [inaudible] got cancer and I just beat cancer and that next weekend, that next week, I go up to (Location) to my doctor and they told me my cancer's coming back and, uh, that was the worst experience. Knowing that it came back." B_MM_03_T
Inattentive, disrespectful, and inaccessible communication	"Uh there was one um nurse practitioner, um, that just kind of was- she- she wasn't in the right uh area (laughs). She should have found some- another area to work in because she wasn't consoling um she was quite abrupt in her responses to you, um, as opposed to being the caring person she should have been. I would have thought, especially dealing with uh someone who is going through cancer, um not only dealing with it physically, but having to deal with it mentally, and she was just- and not in the right- she should have chose another profession to go into in my opinion." A_HN_02_B
	". . . That doctor that I seen he just wasn't very attentive that I felt he wasn't attentive to what I- what I wanted him to do- B_HN_14_V
	". . . the lady who works up under the doctor. [. . .] she was, she's- to put it like this, the lady who had to- who I had to go through to be able to get to the doctor, I think she made it, she made it difficult for me because she was very nasty. And uh I didn't really like that, so I consider that bein' a hard- she gave me a hard time." A_P_01_T

… it could be anybody telling you that, so you want to make sure that it's the doctor and he's confident and comfortable in explaining that to you…– (B_HN_13_T)

I think maybe the doctor can see more about what's going on, if you could do face-to-face. And I can tell more about what, about their honesty, by looking at them face-to-face.– (B_P_09_T)

Participants also felt there were shortfalls in visits when the provider and participant were not in the same location. Participants described *potential distraction issues both on the provider's and patient's sides*.

So, I think it depends on where they [the providers] are—if they are able to give you their undivided attention. I think that makes a big difference in your care as well, and your truth.– (B_HN_04_N)

"…but I could see you [the patient] could be distracted because you are at home (B_HN_12_V)

Discussion

We explored the acceptability and usability of VV among Black patients receiving oncology care who, due to systemic and structural racism, continue to be marginalized in healthcare, particularly specialty cancer care.[28] Black patients highly valued communication and honesty in health care interactions with their doctor and their perceptions of VVs reflect this. Regardless of prior VV use, participants felt VVs were a useful method of accessing routine cancer care, such as medication check-ins or follow-ups. However, participants raised concerns that technology challenges infringed on valued communication with their doctor. Importantly, the option

Table 4. Virtual visit-related themes and subthemes.

Themes and subthemes	Illustrative Quotes
I. Virtual visits are a comfortable and convenient option, when appropriate.	"I thought it was easy, if not easier. I didn't have to travel, didn't have to park, you know, there's just, uh, a lot of- a lot of good things you know, if- if- if you're gonna, long as you're communicating with the person that- to me, it doesn't matter if I'm looking at him face to face or uh- or I'm on the phone with them, you know I- I feel like they know the right questions, they ask." A_P_02_B
	"I don't have any problem (laughs) with, I have no problem with that at all." B_P_07_B
	"I wouldn't want it as my primary, um, only, uh, connection with my doctor, um, but as an uh, option, uh, I like it." A_P_04 _B
Ia. They need to be for appropriate purposes	"We did a virtual visit and he was able to order the antibiotics and everything and we can start treatment that night and not a day or two later, you know." A_P_04_B
	"I don't feel like it's swelling. And then that way they can, they can be there to touch it and feel it and see if it is feeling puffy to them or not, you know what I'm sayin?" B_MM_09_T
	"Virtually that was no problem. We always was- I was able to receive the same knowledge that, if I was in person, other than, like I say, my-them doing the vitals." A_MM_04_B
	"If you get, if you're having a problem, it's probably best to be seen by your doctor, but if it's just something- a check up, I don't think nothing wrong with uh having a virtual meeting if it's just for a follow-up appointment" B_HN_11_T
	". . . you can get updated- you could update medication, you know, they can listen to what your complaints are, listen to you symptoms, they just can't physically touch you. Because, uh, other than that, you know, it's the same." A_P_10_B
	". . . get the same information . . . that I can get in the office, and everything is plain and clear." B_P_07_B
	"Uh, the advantage of it, once again, if it's just a matter of a checkup then that's- that's easier on both." A_P_09_N
Ib. They offer comfort and convenience	"Like I said with the cancer, I wish some of these visits could be virtual, you know so the- the drive time, the traffic, uh the inconvenience in between jobs or losing- uh losing time of n the job . . . and all they do is talk to you" A_P_04_B
	"Yeah, no, um quite convenient like I said those days that I was in pain and didn't feel like uh, maybe even getting dressed, although I forced myself to, but uhm no, they were very convenient." A_HN_02_B
	"Like I said because of the COVID situation I was always more comfortable being at home, rather than being in a doctor's office" B_HN_09_N
	"so it is convenient sometimes because . . . a lot of times I have to get somebody to drive me because I can only, um..I don't like driving alone, far off....a long ways, because I can only see . . . out of one eye. And a whole bunch of people drive with one eye, but it's difficult driving with two eyes.(short laugh)." B_MM_04_T
	"Virtual, virtual the the advantages is I could do it anywhere, you know I don't um have to make appointment or come down to the office to the hospital." B_P_01_T
	"I mean, I didn't have to leave out the house, I didn't have to uh go anywhere uh if it was a day that I just wasn't, uh, feeling well or uh didn't want to really get dressed 'cause, you know, I could just put me a top on or 'cause all they really saw was your face and I had my pajamas or my house shoes." A_MM_04_B
	"Uh what would I see as- uh like I said I'm uh, not having to find a parking spot. Not having to be late for an appointment, you know, because you got your phone with you all the time so. Virtually, I liked it."- A_HN_06_V
	"You're- you're in the comfort of your home, it wasn't necessary to leave the home, you're avoiding traffic. You're avoiding bad weather, uhm, you don't have to worry about parking or wasting gas when you could you know, resolved it at home." A_HN_10_T
	"That saves you gas, that saves you from having to get up, take a shower, get dressed when you can lay in bed and talk" B_MM_09_T
Ic. The option to escalate to in-person visits is useful.	"So by knowing your own health and your body you can determine, you know, which one is going to best suit you." . . . "Having the option is great." A_HN_10_T
	"So what we started doing the first visit of the month would be a actual visit 'cause she said that she liked to actually see her patients you know in person, a physical person, make sure things OK and everything going OK....But she say the second is, it could be a video visit or we can just kind of discuss, you know how things are going and you know, then continue to treatment." A_P_07_B
	"uh, it was okay, but if you-you know, like I said before, eventually to be with the doctor one-on-one, in person" B_HN_05_V
II. Virtual visits present new technology-related challenges that are easily resolved by diverting to a telephone call	"I'm not . . . real adept and those types of things so Sometimes a couple of times I was successful and then other times I wasn't but um if there was a problem, the problem was on my end not on the end of the provider." B_HN_09_N
	"Well, sometimes if the phone doesn't work good, I don't like that it they may cut off in the middle of a virtual visit and I don't like that. Then it be hard to get- get back to the doctor or what have you um. Communication over the air is bad sometimes." A_MM_03_T
	"Uh, you couldn't really stop to get ahold of a technician or something in the middle of trying to do a video visit and the- the doctors didn't seem to be all that skilled in it either, you know they had- they had issues, it was kind of like OK, let's just so- you know abort this or they try to- if I got caught off, they try to connect back up with me." A_P_07_B

Table 4. Continued

Themes and subthemes	Illustrative Quotes
IIa. Concerns about device availability, capabilities, skills, and confidence in VV technology introduce new anxiety and stress regarding physician interactions	". . . sometimes a little anxiety, of, uh, you know are we getting through before a phone call come in or something happens to interrupt the- the visit, but then it gets a little stressful." A_P_07_B
	"Yeah, yeah. Yes, if the Internet or whatever goes on goes out on you in the middle of a very important subject matter um and the phone goes out you can't just call back and that's that's terrible." A_MM_03_T
	"No, my only concern would be they would have to walk me through it. 'Cause I'm, like I said, I'm 68. I'm not that good with the computers, but long they tell me what to do, I think I- I can do it." A_HN_11_N
	"They sent me, um, the link and everything and I tested it out (laughs) um per the instruction, and I did not have any problems and then, when the date of the- of our visit, I think I was selecting the wrong link or I was doing something, but later I Fig.d it out, it was definitely on my side.." B_HN_12_V
	"well it gave me some anxiety at the beginning, when I was doing it incorrectly and trying to get online and not being successful But with them saying hey we are seeing you're having a um you're you're not on yet we can change it to a conference call and you'll just dial in, and I was able to do that um And, and I will say that they they were pretty persistent because they called me on- I was trying to do something on my cell phone, so I didn't answer when they called me on the cell phone then they called my home number- it they were really trying hard to um make sure they contacted me to see if- to get connected so." B_HN_12_V
	"Well, I want to go in person, uh I-I don't, don't have internet so that's out." B_P_10_N
IIb. With support from family and clinic staff, patients could use virtual visits successfully.	"I had uh receptionist or nurse's something call me (cross talk)and they uh tell me about the time they will call. And then, let me know when the next couple of minutes my doctor will call and tell me what to expect and . . . So . . . as they prep me for the visit the doctor call me immediately and all went well." B_P_07_B
	"They told me a number that I could call, and which I call the number and, uh, and plus I've gone into- 'cause I used my MyChart, so I went in and- and- and tried to set it up but it- but it- it came up and said that my uh laptop wasn't equipped to do it. And so when I call that number and talk to the- the computer folks or whoever the- the specialist out there for that- for the video visits. They just asked me about my cell phone, they said it would be easier on the cell phone 'cause it's probably more up-to-date or whatnot, so she helped me uh set up a visit- video visit on my cell phone." A_P_07_B
	". . . they will always call me to make sure that I was available if that's what you mean And um once I was- they knew I was available, then the doctor would eventually call me via video." B_HN_02_B
	". . . with my husband, you know, he was telling me when they get on the phone what to do and all, this and that. Just call me and I'll let you know." B_MM_02_B
	"My son is a technical genius, so I also called him, and he (laugh) helped me walk through it." B_MM_10_B
IIc. The ability for the provider to call them via telephone as a backup was reassuring	"sometimes with everything you gonna have, you know sometimes you have connectivity issues. And you know whether or not you can you know sometimes even- even with my- one of my virtual visits, the doctor was- I was in a lobby waiting and a doctor would come in and, you know, sometimes I would had difficulty hearing him or had difficulty hearing me. We had to break off of that and then go into a conference call.." A_P_10_B
	"well it gave me some anxiety at the beginning, when I was doing it incorrectly and trying to get online and not being successful But with them saying hey we are seeing you're having a um you're you're not on yet we can change it to a conference call and you'll just dial in." B_HN_12_B
	". . . on a particular day, it wouldn't work, so that was worked out because what they would do- would call me and we would finish it over the phone." A_MM_04_B
	"I did see her a couple of times it didn't work when we still talked on the phone, and we still got what we needed to do done." B_HN_12_B
	"I couldn't get online. I couldn't get on my computer, so I had to use my phone . . . but it was just uh, cumbersome is probably the best word for it . . ." A_MM_06_B
III. Black adults prefer in-person visits.	"I'd rather be face-to-face with instead of, you know, on the telephone" B_MM_06_N
	". . . if you really need to see a person in person about some things, I think I'd rather be in person than virtual. If it's important enough that I need to see him personally." A_MM_02_T
	"I prefer to do the personal." B_HN_02_B
IIIa. The voids in nonverbal communication in virtual visits had important shortcomings	"You don't get a feel for one another that way, you know, body language and all that type of stuff going on . . . you can read a doctor's face, you know, you could just feel certain vibes that come from your visit with them." B_MM_07_T
	". . . it wouldn't be personable . . . it would just, uh, having another appointment with anybody, and not me as a personal person." A_MM_02_T
	". . . it will be more personal relationship, uh, to it goes back to again, you'll be making eye to eye contact, um, and you can see the reaction body language speak for itself . . . you have more, so to speak, love in the conversation . . ." B_P_04_N
	"Might not feel as connected with the provider . . . Because there's that distance, even though you see them or hear them, but you, it's that, that touch that sometimes patients need . . . .That they're losing that, um, provider touch that, that personal touch with their care" B_HN_04_N

Table 4. Continued

Themes and subthemes	Illustrative Quotes
	"... I want to see body language, I want to see body movement because I'm a very observant person and a lot of times um you just looking at somebody's face on the screen can't tell you how they're reacting to a particular question you may be asking with regards to your own health or longevity or anything, so it was my preference to see a doctor in person." A_HN_02_B
IIIb. Trust-related issues were raised by participants who had not experienced video visits	"I can't see nothing. I mean I can't, you know, see the doctor. It's just me talking on a telephone and it don't be really the doctor that I'll be talking to, it's really, how do you say, the assistant or secretary you'll be delivering the message, so I'd rather go to the doctor's office and talk to them myself." B_MM_06_N
	"Oh, maybe the emotion on the person's face tells- tell the story about you know what I'm saying. Rather than on the phone and I think I think, maybe the doctor can see more about what's going on, if you could do a face to face. And I can tell more about what about their honesty, by looking at them face to face that's the way I look at." B_P_09_T
	"I wouldn't feel- I wouldn't feel I can trust him in the virtual set- setting, I'll- I would think they're just there for the income." A_P_09_N
	"... you can read a doctor's face, [...] you could just feel certain vibes that come from your visit with them, you know what I mean, but over the phone you can't do that, [...] you see one another, but you really don't get that feeling by what's going on in their body language, you know, are they really telling you the truth, for everything nice, saying things that they should be saying, are they not saying? I think that's, uh, the biggest difference where I'm concerned because I like to see somebody and talk to somebody, you know, the way I can look him in the eyes" B_MM_07_T
IIIc. There were potential distraction issues both on the provider's and patient's sides	"But now we kind of rush into what we need to do and you g- she- she got another patient you know behind me another person behind me so it kind of uh cuts into that time as opposed to if I was in the office." A_P_07_B
	"I might have more questions [in person] than I will over the phone" B_P_01_T
	"He'll probably be doing some other things as opposed to him sitting in his office talking to you ... Well there's certain jobs that you can't cut corners on ... I don't need you sitting outside the kid's karate class, OK?" A_P_09_N

to resort to a telephone visit (ie, audio-only option) served to assuage concerns and ensure access to patients who lacked required technology, connectivity and/or skills. Nonetheless, consistent with the communication factors that patients reported driving prior positive health care experiences, Black adults reported that VVs were less favorable than in-person visits due to a perceived lack of interpersonal connectivity and, among patients who had not experienced a video visit, trust-related concerns. Ultimately, participants voiced a clear preference for in-person visits as their primary modality for receiving oncologic care.

Given the risks of in-person care during the COVID-19 pandemic, Medicare greatly expanded payment for telemedicine, which facilitated the rapid uptake of VV technology.[29-32] More recently, CMS proposed discontinuation of reimbursement for telephone-only services. We found telephone visits played an essential role as a back-up for video visits when technology-related problems arose. Telephone visits also afforded access to virtual care when patients either lacked the devices required for video visits, the necessary connectivity, or felt uncomfortable using devices. The importance of including telephone visits to enhance virtual care equity is echoed in the literature. During the pandemic, multiple studies have reported Black adults used audio-only visits more frequently than video visits.[6,31,33,34] Additionally, older Black adults with Medicare may face increased barriers to accessing virtual care, which typically require computer or smartphone access, compared to audio-only visits through a telephone due to communication issues like difficulties seeing or hearing and a lack of access to technology.[5] Given such findings, it is essential that CMS and private insurers reinstate reimbursement parity for audio-only VV offerings to preempt further inequity in cancer care access and delivery.

Our interviews also unveiled new challenges in patient-provider communication during VVs that warrant addressing. Black adults placed considerable value on communication in determining the positivity (and conversely negativity) of their healthcare experiences. Participants noted that limitations in interpersonal and nonverbal communication were major drawbacks of VVs. In their study comparing the perceptions of Black and Hispanic participants prior to participating in a VV, George *et al* highlighted Black adults' concerns about the lack of physical presence of the physician, reduced attentiveness of providers, and negative impact on their trust in providers.[35,36] Similarly, our study found negative perceptions of prior in-person health visits tended to hinge on ineffective or inaccessible communication. Communication is the foundation to establishing rapport and trust with patients and can have major implications on treatment decisions and oncologic disease outcomes, such as survival.[37,38] While virtual care may make certain aspects of communication more difficult, patient engagement is still possible.[39] If virtual cancer care is integrated into normal practice, adding effective virtual communication strategies to the provider's toolbox is an important area of future exploration and skill development.

Ascertaining the appropriate context and role for virtual health care delivery is essential to its success. Particularly in oncology, there are opportunities for VVs to be complementary to in-person visits, as demonstrated in the Veteran's Affairs system where virtual care was coupled with in-person visits to deliver safe and effective oncology care.[40] Both in our study and others, VVs have high acceptance and satisfaction for follow-up visits.[41] Our results illustrate how VVs, when used alternatively with in-person visits, may augment office based care, allowing for additional comfort and convenience

when an in-person visit is not necessitated by a patient's care needs, and importantly such use was reported as acceptable by Black adults.

To our knowledge, our study the first to focus on the perceived usability of VVs among Black adult VV users and nonusers receiving oncology care. Despite this novelty, we included only adult patients with head and neck cancer, prostate cancer, or multiple myeloma from two oncology academic practices. As such, our findings may not generalize to patients with other cancers or those receiving care at other practices. Importantly, however, we found consistency in themes and subthemes across organization and cancer type. There may, however, be additional, more nuanced phenomenon, regarding Black adult's perceptions of virtual visits that we have not identified. We did, however, use random sampling to identify study participants. Furthermore, patients were included regardless of whether they had participated in a VV, affording us viewpoints from both users and non-users—something that has been missing from prior studies. Additionally, although the TAM[26] was used to create a robust interview guide, there may be other aspects of VVs that were incompletely captured. Nevertheless, topic and theme identification was completed wholistically, using accepted evidence-based standards for qualitative methods. In addition, interviews were completed when virtual care practice was evolving rapidly and understanding of its implications on care quality remains unknown. As well, while this study offers a comprehensive understanding of differences in oncology virtual care for Black adults, underlying structural inequities need to be considered in interpretation in these results and ultimately addressed to ensure equity within virtual oncology care services.

Despite these limitations, our findings offer insights into Black adults' perceptions regarding the usability and acceptability of VV within oncology care. In so doing they fill a void by adding perspectives from a subgroup of patients whose voice has not been well represented within the literature on virtual visits. Importantly, our sample includes both adopters and nonadopters of VV technology allowing an understanding of barriers not included to date. These findings also suggested meaningful ways to improve the acceptability and accessibility of VVs among Black adults receiving oncology care. These include: 1) having and articulating a plan to telephone patients if the VV connection fails (eg, "if we lose connection, I will call your phone. Is this a good number with which to contact you?) and offering verbal support and reassurance if connections are suboptimal; 2) ensuring the surroundings and verbal communication during the VV demonstrate that patients and providers are able to give their undivided attention; 3) offering the option to escalate care to an in-person visit should the need arise; and 4) offering training and practice sessions prior to the VV to decrease anxiety regarding connectivity issues that surround VVs. These, along with an organizational and provider focus on equity in VV delivery, are required to ensure training time for providers and resources for patients are available to improve equity of VV delivery.

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Conflict of Interest

Samantha Tam report research funding from Genentech for the present study. Christine Neslund-Dudas owns stock in Gilead, Pfizer, and Viatris, and has received research funding from Genentech for the present study. Alan C. Kinlaw reported research funding from Genentech. Trevor J. Royce is employed by Flatiron Health, Inc., which is an independent subsidiary of the Roche Group, and reports stock ownership of Roche, serves in an advisory role for Agilix Health, and ownership/equity in Lumata Health, VitriVax, and Sonovascular. William A. Wood reports research support from Genentech and Pzifer, advising and equity in Koneska Health, consulting activity with Teladoc Health, and advising for Quantum Health. The other authors indicated no financial relationships.

Author Contributions

Conception/design: S.T., C.N.D., A.C.K., T.J.R., A.B.S., J.N.S., W.A.W., J.E.L. Collection and/or assembly of data: C.N.D., A.M.B., L.C.J.B., P.P., J.E.L. Data analysis/interpretation: S.T., C.N.D., A.M.B., L.C.J.B., I.F., J.E.L. Manuscript writing: S.T., C.N.D., A.M.B., L.C.J.B., I.F., T.J.R., A.B.S., J.N.S., W.A.W., J.E.L. Final approval of the manuscript: All authors.

Data Availability

The data underlying this article will be shared on reasonable request to the corresponding author.

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Supplementary Material

Supplementary material is available at *The Oncologist* online.

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